IN THE CLAIMS:

Claim 1 (Previously Presented): A method of forming a non-oxide thin film, comprising:

introducing a work function reducing agent onto a surface of a sputter target facing into a substrate in a process chamber;

providing an inert gas into the process chamber;

ionizing the inert gas, thereby generating a plurality of electrons;

disintegrating a plurality of negatively charged ions from the sputter target; and

forming the non-oxide thin film on the substrate from the sputtered negatively charged ions and neutral particles.

Claim 2 (Original): The method according to claim 1, wherein the non-oxide thin film includes one of copper (Cu), silver (Ag), gold (Au), aluminum (Al), molybdenum (Mo), tungsten (W), Titanium (Ti), and Tantalum (Ta), Chromium (Cr), and diamond-like-carbon (DLC) thin film.

Claim 3 (Original): The method according to claim 1, wherein the work function reducing agent includes one of cesium, rubidium, potassium, sodium, and lithium.

Claim 4 (Original): The method according to claim 1, wherein the sputter target is applied with a voltage of one of straight DC, pulsed DC, and RF power supply.

Claim 5 (Original): The method according to claim 6, wherein the applied voltage to the sputter target is in the range of about 100 to 1000 volt.

Claim 6 (Original): The method according to claim 1, wherein the substrate is either grounded or biased with respect to the sputter target.

Claim 7 (Original): The method according to claim 1, wherein the substrate is maintained at a temperature in the range of about 25 to 500°C.

Claim 8 (Original): The method according to claim 1, wherein the process chamber has a process pressure in the range of about 10^{-4} to 10^{-2} Torr.

Claim 9 (Original): The method according to claim 1, further comprising confining the electrons in close proximity to the surface of the sputter target prior to disintegrating a plurality of negatively charged ions.

Claim 10 (Currently Amended): A method of forming an non-oxide thin film using a magnetron sputter system, comprising:

evacuating the process chamber to maintain a base pressure;

introducing a work function reducing agent onto a surface of a sputter target facing into the substrate;

providing an inert gas into the process chamber;

maintaining a process pressure of the process chamber;

ionizing the inert gas, thereby generating a plurality of electrons;

confining the electrons in close proximity to the surface of the sputter target;

disintegrating a plurality of negatively charged ions from the sputter target; and

forming the non-oxide thin film on the substrate from the sputtered negatively charged ions and neutral particles ~~reacted with the ionized oxygen gas~~.

Claim 11 (Original): The method according to claim 12, wherein the non-oxide thin film includes one of copper (Cu), silver (Ag), gold (Au), aluminum (Al), molybdenum (Mo), tungsten (W), Titanium (Ti), and Tantalum (Ta), Chromium (Cr), and diamond-like-carbon (DLC) thin film.

Claim 12 (Original): The method according to claim 12, wherein the work function reducing agent includes one of cesium, rubidium, potassium, sodium, and lithium.

Claim 13 (Original): The method according to claim 12, wherein the sputter target is applied with a voltage of one of straight DC, pulsed DC, and RF power supply.

Claim 14 (Original): The method according to claim 17, wherein the applied voltage to the sputter target is in the range of about 100 to 1000 volt.

Claim 15 (Original): The method according to claim 12, wherein the substrate is either grounded or biased with respect to the sputter target.

Claim 16 (Original): The method according to claim 12, wherein the substrate is maintained at a temperature in the range of about 25 to 500°C.

Claim 17 (Original): The method according to claim 12, wherein the process pressure is in the range of about 10^{-4} to 10^{-2} Torr.